

Application No.: 10/578,626
Amendment under 37 CFR 1.111
Reply to Office Action dated January 5, 2009
April 6, 2009

REMARKS

By this amendment, claim 1 has been amended and new claim 24 has been added in the application. Currently, claims 1, 5-6 and 24 are pending in the application.

Claims 1 and 6 were rejected under 35 USC 102(b) as being anticipated by Eilerman (U.S. Patent No. 3,261,736). Also, claim 1 was rejected under 35 USC 102(b) as being anticipated by European Patent Application Publication No. 072,493. Further, claim 5 was rejected under 35 USC 103(a) as being obvious over Eilerman.

These rejections are respectfully traversed in view of the amendments to the claims and the remarks below.

The present invention relates to an aqueous solution of a chromium salt and a method for producing the same (see page 1, paragraph [0001] of the specification).

When the chromium salt of the present invention is a chromium chloride, an aqueous solution of chromium chloride includes a compound represented by the composition formula: $\text{Cr}(\text{OH})_x\text{Cl}_y$ (wherein $0 \leq x \leq 2$, $1 \leq y \leq 3$, and $x + y = 3$) (see page 7, paragraph [0018] of the specification).

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A preferred method for producing an aqueous solution of chromium chloride, as an example of the aqueous solution of the chromium salt of the present invention, will be described. The production method includes adding an organic reducing agent to an aqueous solution of chromic acid to reduce part of the chromic acid in advance in the first stage of reaction, and then mixing hydrochloric acid and the organic reducing agent and adding the mixture to the reaction solution to complete the reaction (see page 14, paragraph [0034] of the specification).

In the first stage of reaction, the organic reducing agent is added to the aqueous solution of chromic acid to reduce part of the chromic acid in advance, and then hydrochloric acid and the organic reducing agent are mixed and added to the aqueous solution of chromic acid (see page 17, paragraph [0040] of the specification).

By this amendment, independent claim 1 has been amended to form a product-by-process claim. Specifically, independent claim 1 has been amended to recite "An aqueous solution of a chromium salt comprising: an oxalic acid content of 8% by weight or less relative to chromium, wherein the chromium salt is a chromium chloride, wherein the aqueous solution contains a basic chromium

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chloride represented by the composition formula $\text{Cr}(\text{OH})_x\text{Cl}_y$ (wherein $0 < x \leq 2$, $1 \leq y < 3$, and $x + y = 3$); wherein the aqueous solution of the chromium salt is produced by a process comprising the steps of: adding an organic reducing agent composed of a monohydric alcohol or a dihydric alcohol to an aqueous solution of chromic acid to reduce part of a chromic acid in advance in a first stage of reaction; mixing hydrochloric acid and the organic reducing agent to form a mixture; and adding the mixture to the aqueous solution of chromic acid so as to complete the reaction". These features are not shown or suggested by Eilerman and European Patent Application Publication No. 072,493.

Eilerman relates to a glass fiber treatment and it has particular relation to a size for treating glass fibers which are to be woven into cloth and used as a reinforcement for resins (see col. 1, lines 9-12).

Eilerman discloses that the final solution of $\text{Cr}(\text{OH})\text{Cl}_2$ contains 8.21 percent Cr (see col. 4, lines 43-44).

Eilerman does not disclose that an aqueous solution of a chromium salt comprising: an oxalic acid content of 8% by weight or less relative to chromium, and wherein the aqueous solution of the chromium salt is produced by a process comprising the steps

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of: adding an organic reducing agent composed of a monohydric alcohol or a dihydric alcohol to an aqueous solution of chromic acid to reduce part of a chromic acid in advance in a first stage of reaction; mixing hydrochloric acid and the organic reducing agent to form a mixture; and adding the mixture to the aqueous solution of chromic acid so as to complete the reaction as claimed in independent claim 1.

For these reasons, it is believed that Eilerman does not show or suggest the present claimed features of the present invention. Applicants also submit that European Patent Application Publication No. 072,493 does not make up for the deficiencies in Eilerman.

European Patent Application Publication No. 072,493 relates to a tanning salt containing chromium (III), and a method for its manufacture.

European Patent Application Publication No. 072,493 discloses a tanning salt for the tanning of leather, containing trivalent chromium as well as calcium chloride, characterized in that chromium in form of $\text{Cr}(\text{OH})\text{Cl}_2$ (see abstract).

European Patent Application Publication No. 072,493 does not disclose that an aqueous solution of a chromium salt comprising:

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an oxalic acid content of 8% by weight or less relative to chromium, wherein the chromium salt is a chromium chloride, wherein the aqueous solution contains a basic chromium chloride represented by the composition formula $\text{Cr}(\text{OH})_x\text{Cl}_y$ (wherein $0 < x \leq 2$, $1 \leq y < 3$, and $x + y = 3$); wherein the aqueous solution of the chromium salt is produced by a process comprising the steps of: adding an organic reducing agent composed of a monohydric alcohol or a dihydric alcohol to an aqueous solution of chromic acid to reduce part of a chromic acid in advance in a first stage of reaction; mixing hydrochloric acid and the organic reducing agent to form a mixture; and adding the mixture to the aqueous solution of chromic acid so as to complete the reaction as claimed in independent claim 1.

It is therefore respectfully submitted that Eilerman and European Patent Application Publication No. 072,493, individually or in combination, do not teach, disclose or suggest the presently claimed invention and it would not have been obvious to one of ordinary skill in the art to combine these references to render the present claims obvious.

New independent method claim 24 has been added in the application. Specifically, new independent method claim 24

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recites "A method for producing an aqueous solution of a chromium salt including an oxalic acid content of 8% by weight or less relative to chromium, wherein the chromium salt is a chromium chloride, and the aqueous solution contains a basic chromium chloride represented by the composition formula $\text{Cr}(\text{OH})_x\text{Cl}_y$ (wherein $0 < x \leq 2$, $1 \leq y < 3$, and $x + y = 3$), comprising the steps of: adding an organic reducing agent composed of a monohydric alcohol or a dihydric alcohol to an aqueous solution of chromic acid to reduce part of a chromic acid in advance in a first stage of reaction; mixing hydrochloric acid and the organic reducing agent to form a mixture; and adding the mixture to the aqueous solution of chromic acid so as to complete the reaction". Applicants respectfully submit that these features claimed in new claim 24 also define over Eilerman, European Patent Application Publication No. 072,493 and the other prior art of record. Allowance of this claim is also respectfully requested.


In view of the foregoing claim amendments and remarks, it is respectfully submitted that the application is now in condition for allowance and an action to this effect is respectfully requested.

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If there are any questions or concerns regarding the amendments or these remarks, the Examiner is requested to telephone the undersigned at the telephone number listed below.

Respectfully submitted,

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Randolph A. Smith
Reg. No. 32,548

SMITH PATENT OFFICE
1901 Pennsylvania Ave., N.W.,
Suite 901
Washington, DC 20006-3433
Telephone: 202/530-5900
Facsimile: 202/530-5902
Kotaki040609